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| 10/042,070 | 10/19/2001 | Naimish Patel | SYCS-043/P95 | 3895 |
| 959 | 7590 | 06/15/2005 | EXAMINER | |
| LAHIVE & COCKFIELD, LLP. 28 STATE STREET BOSTON, MA 02109 | | | TRAN, DZUNG D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2638 | |

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,070

Applicant(s)

PATEL ET AL.

Examiner

Dzung D. Tran

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a circuit adaptation, one or more circuit layer, a wavelength power balancing, a wavelength dispersion compensation, a wavelength protection, one or more circuit layer comprises a signal regeneration, the one or more circuit layer comprises per circuit performance monitoring and one or more circuit layer comprises a wavelength protection, an electrical add and an electrical drop function" in claims 9-12, 14, 16-19, 24-27, 29, 31-34, 37-44 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of

Art Unit: 2633

the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 9-12, 14, 16-19, 24-27, 29, 31-34, 37-44 are rejected under 35 U.S.C.

112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 9-12, 14, 16-19, 24-27, 29, 31-34, 37-44 requires "a circuit adaptation function, one or more circuit layer function, a wavelength power balancing function, a wavelength dispersion compensation function, a wavelength protection function, one or more circuit layer functions comprises a signal regeneration function, the one or more circuit layer functions comprises per circuit performance monitoring function and one or more circuit layer functions comprises a wavelength protection function, an electrical add and an electrical drop function ". However, the specification and drawing do not provide any specific detail to teach the limitations above and how they relate to the

Art Unit: 2633

invention. Without such detail description, the disclosure does not enable a person of ordinary to made and use the claimed invention.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 9-12, 14-27, 29-35, 37-45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. US publication no. 2002/0135835 in view of Prior Art, figure 1 and specification.

Regarding claims 1 and 35, Lauder discloses an optical node/method for processing an incoming optical signal with a plurality wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

a fiber interface unit (e.g., figure 1 shown DWDM interface receive and extract a DWDM signal from backbone fiber 106, page 3, paragraph 0039, lines 3-5) for receiving, extracting and processing said plurality of wavelengths;

a port chassis unit (e.g. the combination of TIC 102, 140, 120..., page 2, paragraph 0028, line 2) with a plurality of input ports (e.g. the input ports that receive the signals from DWDM interface) and a plurality of output ports (e.g. the output ports

Art Unit: 2633

to the switch 108) for extracting each of said plurality of signal components from said plurality of wavelengths processed by said fiber interface unit; and

a switch chassis unit (e.g. switch 108, page 2, paragraph 0028, line 25) for routing said plurality of signal components from said input ports to said plurality of output ports in said a port chassis unit (e.g. the combination TIC 102, 140, 120..., page 2, paragraph 0028, line 2).

Lauder differs from claims 1 and 35 of the present invention in that he does not specifically disclose a port chassis unit and a switch chassis unit are integrated on a single platform. However, the Prior Art, specification page 2, paragraph 0024 discloses that a conventionally combined switching/transport system which can be constructed on a single platform as shown in figure 1. At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporated the teaching of Prior Art in the system of Lauder, that is combine the port chassis unit and the switch chassis unit on a single platform. One of ordinary skill in the art would have been motivated to do this order to reduce the optical components (i.e., optical connectors) and improve system performing (e.g., it eliminates the optical connectors needed for connecting the port chassis unit and the switch chassis unit platform and it is well recognized in the art that optical power reduce when it transmits through an optical connector). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the port chassis unit and the switch chassis unit on a single platform, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together

Art Unit: 2633

involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Regarding claim 20, Lauder discloses an optical node for processing an incoming optical signal with a plurality wavelengths with each of said plurality of wavelengths having a plurality of signal components in a wavelength division multiplexing (WDM) optical network (figure 1), comprising:

a fiber interface unit (e.g., figure 1 shown DWDM interface receive and extract a DWDM signal from backbone fiber 106, page 3, paragraph 0039, lines 3-5) for receiving, extracting and processing said plurality of wavelengths;

a transponder unit 200 (figure 2, shown unit 200 receive a plurality of DWDM signal from DWDM trunk) for extracting (210) each of said plurality of signal components from said plurality of wavelengths processed by said fiber interface unit (DWDM interface); and

a switch chassis unit (e.g. switch 108, page 2, paragraph 0028, line 25) coupled to said transponder unit 200 for routing said plurality of signal components from said input ports to said plurality of output ports.

Lauder differs from claim 20 of the present invention in that he does not specifically disclose a fiber interface unit and a transponder unit are integrated on a single platform and switching plurality of signal components in a time domain. However, the Prior Art, specification page 2, paragraph 0024 discloses that a conventionally combined switching/transport system which can be constructed on a single platform as shown in figure 1 and the commercial optical switch that switching

Art Unit: 2633

plurality of signal components in a time domain (page 1, paragraph 0005). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of Prior Art in the system of Lauder, that is combine a fiber interface unit and a transponder on a single platform. One of ordinary skill in the art would have been motivated to do this order to reduce the optical components (i.e., optical connectors) and improve system performing (e.g., it eliminates the optical connectors needed for connecting the port chassis unit and the switch chassis unit platform and it is well recognized in the art that optical power reduce when it transmits through an optical connector). Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the port chassis unit and the switch chassis unit on a single platform, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Regarding claim 2, in figure 2 Lauder discloses the wavelength transceiver (204, page 2, paragraph 0029, line 4) imposed between a port chassis unit (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) and a switch chassis unit (e.g. switch 108, page 2, paragraph 0028, line 25).

Regarding claim 3, Lauder discloses the wavelength transceiver 204 can be a transponder (e.g., comprise a suitable DWDM laser, page 2, paragraph 0029, lines 7-10).

Art Unit: 2633

Regarding claims 4, 21 in figure 1 Lauder discloses optical input line 106 coupled to a fiber interface unit (DWDM interface) and optical signal having different wavelengths (e.g. DWDM wavelengths).

Regarding claims 5, 6, 15, 22, 23 and 30, Lauder further discloses the transceiver 204 and regenerator 208 for extracting and processing the optical signal.

Regarding claim 7, Lauder discloses in figure 1, a switch chassis unit (e.g. switch 108, page 2, paragraph 0028, line 25) provides a space switch function.

Regarding claims 9-12, 14, 16-19, 24-27, 29, 31-34, 37-44, applicants admit that the wavelength multiplexing and wavelength de-multiplexing function, wavelength power balancing function, wavelength dispersion compensation function, wavelength protection function, wavelength performance monitoring function, wavelength add/drop function, signal generation function recited in dependent claims above are well known to those of ordinary skill in the art of WDM networks and applicants believe that those of ordinary skill in the art of WDM networks can practice the subject matter added in dependent claims without undue experiment.

Regarding claim 45, Lauder discloses an optical switch node (figure 1, element 100), comprising: a plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) assemblies having mounted thereto, a plurality of DWDM lasers (from transceiver 204, page 2, paragraph 0028, line 25) having a plurality of wavelengths for interconnecting said plurality of port interface circuit card (e.g. TIC 102, 140, 120, page 2, paragraph 0028, line 2) assemblies with a switch chassis (e.g. switch 108, page 2, paragraph 0028, line 25) and a plurality of optical transceivers

Art Unit: 2633

(transceiver 204, page 2, paragraph 0028, line 21) to interconnect said plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) and wherein a plurality of optical transceivers (transceiver 204, page 2, paragraph 0028, line 21) and said plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) are integrated on a single platform (see figure 2).

Regarding claim 46, Lauder discloses the plurality of port interface circuit card assemblies (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) further comprises a dense wavelength division multiplexing (DWDM) receiver (from transceiver 204, page 2, paragraph 0028, lines 22-23) for receiving and processing a plurality of optical channel signals.

4. Claims 13, 28, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. US publication no. 2002/0135835 in view of Graves et al. US publication no. 2001/0050790.

Regarding claims 13, 28, 36, as it is understood in view of the above 112 problems, as per claims above, Lauder discloses all the limitations except that the first module comprising wavelength amplification function (claims 13, 28, 36). Graves, from the same field of endeavor, discloses wavelength amplification function 104 (page 3, paragraph 0035, line 2). Since optical amplifier is well known for amplifying an optical signal and since it is also well recognized that signal degrades as it travel down through the transmission path, at the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporated the wavelength

Art Unit: 2633

amplification function of Graves in the system of Lauder in order to restore the signal strength to a desirable level to obtain good quality.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. US publication no. 2002/0135835 in view of Kajita US patent no. 6,687,280.

Regarding claim 8, Lauder discloses all the limitations except for the transceiver comprise a vertical cavity surface emitting laser diode (VCSEL). Kajita discloses a vertical cavity surface emitting laser diode (VCSEL) (see abstract). At the time of the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate a VCSE laser in the transceiver 204 of Kajita in the system of Lauder. One of ordinary skill in the art would have been motivated to do this in order to take the advantage of the VCSEL that is an extremely small, monolithically integrated lasers may be constructed, with a self-aligned external cavity. Tuning speeds and stability are therefore likely to be high, and the cavity is automatically set for lasing.

Response to Arguments

6. Applicant's arguments filed on 01/31/2005 have been fully considered but they are not persuasive.

A Objection to drawings

Applicant argues that "a **circuit adaptation**, one or more **circuit layer**, a **wavelength power balancing**, a **wavelength** dispersion compensation, a **wavelength**

Art Unit: 2633

protection, one or more **circuit layer** comprises a **signal regeneration**, the one or more **circuit layer** comprises **per circuit performance monitoring** and one or more **circuit layer** comprises a **wavelength** protection, an **electrical** add and an electrical drop function" are described in the Specification with reference to the elements depicted in the drawing. However, examiner found nowhere in the Specification describe the limitations above.

B Claim Rejections

Applicant argues that "a **circuit adaptation**, one or more **circuit layer**, a **wavelength power balancing**, a **wavelength** dispersion compensation, a **wavelength** protection, one or more **circuit layer** comprises a **signal regeneration**, the one or more **circuit layer** comprises **per circuit performance monitoring** and one or more **circuit layer** comprises a **wavelength** protection, an **electrical** add and an electrical drop function" are described in the Specification with reference to the elements depicted in the drawing. However, examiner found nowhere in the Specification describe the limitations above.

C Rejection of claims 1, 2, 4-6, 15 and 35 under USC § 102(e) as being anticipated by Lauder US Application Publication no. 2002/0135835.

Applicant argues that Lauder reference does not disclose or suggest a port chassis unit and a switch chassis unit are integrated on a single platform. However, the Prior Art, specification page 2, paragraph 0024 discloses that a conventionally combined switching/transport system which can be constructed on a single platform as shown in figure 1. Furthermore, it would have been obvious to one having ordinary

Art Unit: 2633

skill in the art at the time the invention was made to combine the port chassis unit and the switch chassis unit on a single platform, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

C Rejection of claims 20, 22, 23 and 30 under USC § 102(e) as being anticipated by Lauder US Application Publication no. 2002/0135835.

Applicant argues that Lauder reference does not disclose or suggest a transponder unit extract signal components from each of the wavelengths processed by the fiber interface unit and switching plurality of signal components in a time domain. However, figure 2 of Lauder shown transponder unit 200 extract signal components from each of the wavelengths processed by the fiber interface unit (e.g., DWDM trunk) and the Prior Art, specification page 2, paragraph 0024 discloses that a conventionally combined switching/transport system which can be constructed on a single platform as shown in figure 1 and the commercial optical switch that switching plurality of signal components in a time domain (page 1, paragraph 0005).

D Rejection of claims 45 and 46 under USC § 102(e) as being anticipated by Lauder US Application Publication no. 2002/0135835.

Applicant argues that Lauder reference does not disclose or suggest a plurality of port interface circuit card and a plurality of optical transceivers are integrated on a single platform. However, Lauder discloses an optical switch node (figure 1, element 100), comprising: a plurality of port interface circuit card (e.g. TIC 102, 140, 120 page

Art Unit: 2633

2, paragraph 0028, line 2) assemblies having mounted thereto, a plurality of DWDM lasers (from transceiver 204, page 2, paragraph 0028, line 25) having a plurality of wavelengths for interconnecting said plurality of port interface circuit card (e.g. TIC 102, 140, 120, page 2, paragraph 0028, line 2) assemblies with a switch chassis (e.g. switch 108, page 2, paragraph 0028, line 25) and a plurality of optical transceivers (transceiver 204, page 2, paragraph 0028, line 21) to interconnect said plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) and wherein a plurality of optical transceivers (transceiver 204, page 2, paragraph 0028, line 21) and said plurality of port interface circuit card (e.g. TIC 102, 140, 120 page 2, paragraph 0028, line 2) are integrated on a single platform (see figure 2).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2633

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran
05/25/2005



KENNETH VANDERPUYE
PRIMARY EXAMINER